

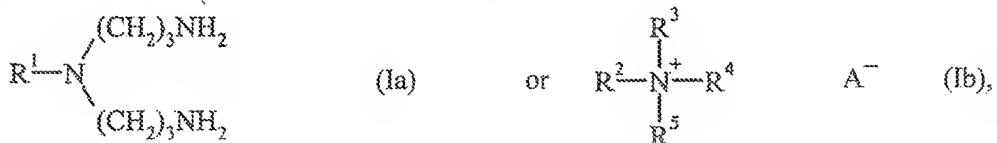
REMARKS

Claims 1-4, 7-15, 21, 23, 25, 27, 29, 34 and 35 are pending in the application and all of the claims have been rejected. Claims 1, 34 and 35 have been amended to remove the term "and" so that the claims are now in proper form. No substantive amendments to the claims were made, and therefore, no new matter was added.

The Applicants respond to the non-final Office Action mailed on August 12, 2011 as follows:

The Invention

The present invention is a process of utilizing a disinfectant composition that consists of an amine and/or quaternary ammonium salt, at least one alkanolamine and water as a solvent. The amine and/or quaternary ammonium salt has the general formula:



where R¹ is C₆₋₁₈-alkyl,

R² is benzyl or C₆₋₁₈-alkyl,

R³ is C₁₋₁₈-alkyl or -(CH₂)_{2-O}_nR⁶ where n = 1-20,

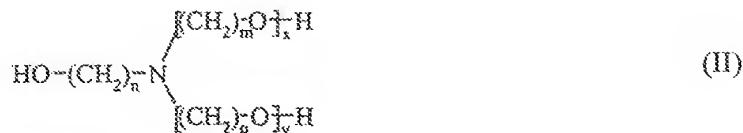
R⁴ and R⁵ independently of one another are C₁₋₄-alkyl,

R⁶ is hydrogen or unsubstituted or substituted phenyl, and

A⁻ is a monovalent anion or one equivalent of a polyvalent anion of an inorganic or

organic acid.

The at least one alkanolamine has the general formula:



where n and, if present, m and O independently of one another have the value 2 or 3, and x and y independently of one another have the value 0 or 1, or a corresponding salt; in the mass ratio a):b) of 20:1 to 1 :20.

The components are combined to provide synergistic disinfectant compositions for use as virucidal agents, in particular against polioviruses. The compositions exhibit good activity towards fungi and, in particular, towards viruses even at high dilution.

Claim Rejections – 35 U.S.C. § 103 – Zhou and Zhou '561

Claims 1-4, 7-15, 21, 23, 25, 27, 29 and 34-35 have been rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/03692 to Zhou et al. ("Zhou") in view of U.S. Patent No. 6,017,561 to Zhou et al. ("Zhou '561"). Zhou discloses an aerosol antimicrobial composition that includes: (a) an anionic polymer or prepolymer; (b) a quaternary ammonium compound, the components (a) and (b) combining to form an antimicrobially effective complex; (c) at least one water-soluble or dispersible organic solvent having a vapor pressure of at least 0.001 mm Hg at 25°C and present in a solubilizing--or dispersion--effective amount; (d) an effective amount of a propellant; and (e) the remainder, water. (See Abstract.)

However, as the Office Action concedes on page 5, “Zhou teaches aerosol compositions, and *the propellant is required* (Abstract).” (Emphasis added.) Moreover, the Office Action further concedes on page 5 that amended claim 1 “excludes the propellant required by Zhou.” To overcome this admitted deficiency in Zhou, at page 5, the Office Action cites Zhou ‘561 for teaching an antimicrobial cleaning composition that includes a quaternary ammonium compound that “can be readily applied by conventional dispensing means.”

The Office Action states in the paragraph beginning at the bottom of page 5 and continuing onto page 6 that:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of decontaminating a surface by applying a composition that is an effective virucide and that contains a quaternary ammonium salt . . . and an alkanolamine (triethanolamine), as suggested by Zhou, *[to] modify the aerosol composition of Zhou by eliminating the propellant in order to apply the composition in other conventional dispensing means* such as by spraying a surface as suggested by Zhou ‘561, and produce the instant invention.

(Emphasis added.)

The rejection of the claims is based on the finding that it would have been obvious to substitute the teachings of Zhou ‘561 into the teachings of Zhou and “modify the aerosol composition of Zhou by eliminating the propellant in order to apply the composition in other conventional dispensing means.” However, this proposed combination of Zhou and Zhou ‘561 fails to fully consider all of the teachings of the references and the consequences of the proposed combination.

The Aerosol Compositions Taught by Zhou require Metallic Containers

First, one of ordinary skill in the art would understand that the aerosol antimicrobial compositions taught by Zhou include a propellant so that they can be dispersed from an aerosol can, i.e., a pressurized container. One of ordinary skill in the art would also understand that the container would have to be made from metal because plastic containers cannot withstand the high pressures that are required for an aerosol container. (Zhou teaches that the container can be pressurized up to 100 psig (page 17, line 30).) This is consistent with the teachings of Zhou, which states at page 16, lines 15-22 that various metal containers can be used:

As already noted above, the preferred container for dispensing of the present composition in aerosol form is a tin-plated steel can, but other aerosol packages may be suitable for use. *Therefore, it is advantageous to add one or more corrosion inhibitors to prevent or at least reduce the rate of expected corrosion of such a metallic dispenser.*

(Emphasis added.)

Zhou goes on to state on page 16, lines 23-36 that *preferred corrosion inhibitors include alkanolamines, such as triethylanolamine*. Thus, Zhou teaches that alkanolamines, such as triethylanolamine, are used as “*corrosion inhibitors* to prevent or at least reduce the rate of expected corrosion” of the metallic containers that store the aerosol antimicrobial compositions.

The Modification of Zhou to Remove the Propellant also removes the Metallic Container

The Office Action alleges that it would have been obvious to remove the propellant in Zhou in view of the teachings of Zhou '561. One of ordinary skill in the art would understand that, *if the propellant was removed, the container in Zhou would no longer have to be*

pressurized. One of ordinary skill in the art would also understand that, *if the container was not pressurized, there would be no need or motivation to construct the container from a metallic material*, which would be substantially more costly than a plastic container. Therefore, it would be obvious to one of ordinary skill in the art to use a plastic container for the modified, non-aerosol antimicrobial composition derived from the combination of Zhou and Zhou '561.

Evidence of this is found in any store that sells disinfecting cleaning products similar to the Applicants' composition, as well as Zhou and Zhou '561. Such products are shown below. Because none of the containers for these cleaning compositions is pressurized, a plastic container is used. One skilled in the art would not use an unpressurized metal container.



The Combination of Zhou and Zhou '561 Must Include All of the Teachings

Combining Zhou and Zhou '561, as suggested in the Office Action, may lead to

compositions that do not contain a propellant, but it also would lead to compositions that do not contain alkanolamines. *Once the propellant is removed from the container in Zhou, the container no longer requires pressurization and it would be obvious to one of ordinary skill in the art to use a plastic container—and not a metal container.* Since Zhou teaches that alkanolamines are used as corrosion inhibitors, Zhou teaches away from using alkanolamines in the composition when a non-metallic container is used. One skilled in the art would understand that the corrosion inhibiting alkanolamines are only used in the compositions to prevent metal from corroding. Thus, when a plastic container is used, alkanolamines become unnecessary and one skilled in the art would not find it obvious to include them in compositions derived from a combination of Zhou and Zhou '561.

In *Ex parte Whalen II*, No. 2007-4423 (Bd. Pat. App. & Int. July 23, 2008), the Board found at page 16 that:

[W]hen the prior art teaches away from the claimed solution as presented here [], obviousness cannot be proven merely by showing that a known composition could have been modified by routine experimentation or solely on the expectation of success; it must be shown that those of ordinary skill in the art would have had some apparent reason to modify the known composition in a way that would result in the claimed composition.

The Examiner has not persuasively explained why a person of ordinary skill in the art would have had a reason to modify the compositions taught by Evans, Greff '767, or Taki in a way that would result in the compositions defined by the claims on appeal. Therefore, the Examiner has not made out a prima facie case of obviousness under 35 U.S.C. § 103.

(Emphasis added.)

The Office Action offers no explanation as to why: "One of ordinary skill in the art would

find it obvious to use various conventional dispensing means such as spraying a liquid cleaning composition (suggested by Zhou) on a surface that are known in the art and evidenced by the teaching of Zhou '561" (Office Action, page 6, second paragraph) and not use a plastic container rather than a metallic container. *One of ordinary skill in the art would know that non-aerosol conventional dispensing means such as spraying a liquid cleaning composition" do not require a metal container and, therefore, one skilled in the art would not choose to use a metal container.* Just as it would be obvious to one of ordinary skill in the art to use a non-aerosol container, it would also be obvious to use a non-metallic container. Such a non-metallic container would not require the composition to include alkanolamines as a corrosion inhibitor. Accordingly, the combination of Zhou and Zhou '561 would not lead one of ordinary skill in the art to the compositions in the claims.

The Office Action Does Not Explain the Combination of Zhou and Zhou '561

The Office Action combines Zhou and Zhou '561 and concludes that the combination teaches a disinfectant composition consisting of an amine and/or quaternary ammonium salt and an alkanolamine *without an aerosol propellant*. However, there is no explanation of why one of ordinary skill in the art would include an alkanolamine in the composition when Zhou teaches that a composition that did not include an aerosol propellant would not require a metal container and, therefore, would not require an alkanolamine.

In *Takeda Chemical Industries v. Alphapharm Pty., Ltd.*, 492 F. 3d 1350, 1356-57 (Fed. Cir 2007), the Federal Circuit discussed how the Supreme Court's decision in *KSR Int'l Co. v.*

Teleflex, Inc., 550 U.S. 398 (2007) applied to chemical compounds and stated that

While the *KSR* Court rejected a rigid application of the teaching, suggestion, or motivation ("TSM") test in an obviousness inquiry, the Court acknowledged the importance of identifying "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" in an obviousness determination. *KSR*, 127 S.Ct. at 1731. Moreover, the Court indicated that there is "no necessary inconsistency between the idea underlying the TSM test and the *Graham* analysis." *Id.* As long as the test is not applied as a "rigid and mandatory" formula, that test can provide "helpful insight" to an obviousness inquiry. *Id.* Thus, *in cases involving new chemical compounds, it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner* to establish *prima facie* obviousness of a new claimed compound.

(Emphasis added.)

There is no reason for one of ordinary skill in the art to find that the combination of Zhou and Zhou '561 discloses a composition that includes an alkanolamine because Zhou teaches that an alkanolamine is only used as a corrosion inhibitor for metal containers.

For the reasons discussed above, the Applicants respectfully submit that claims 1-4, 7-15, 21, 23, 25, 27, 29, 34 and 35 would not be obvious in view of a combination of Zhou and Zhou '561 and request that the rejections be withdrawn.

Application Serial No. 10/501,395
Amendment in Response to Non-Final Office Action
Mailed on August 12, 2011

Docket No. LP-1940 (1686-456 PCT/US/RCE)

Conclusion

The Applicants submit that the accompanying arguments have overcome the rejections of the claims and respectfully request that all of the claims be allowed.

If the Examiner has any questions or comments relating to the present application, he is respectfully invited to contact Applicants' attorney at the telephone number set forth below.

Respectfully submitted,

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